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VALVULAR HEART DISEASE

LONG TERM DURABILITY OF EDWARDS BALLOON EXPANDABLE TRANSCATHETER AORTIC VALVE IMPLANTATION

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Background: Whilst Transcatheter Aortic Valve Implantation (TAVI) using the Edwards Balloon Expandable Valve (EBEV) has been shown to be safe and effective, no data is available on long-term valvular function and clinical outcomes.

Methods: To assess long-term durability, we analysed all patients who underwent successful TAVI who survived >30 days and reached a minimum of 3 years follow-up. Clinical follow-up, echocardiographic and Computed Tomography (CT) scanning were performed to assess valvular function.

Results: 69 patients were analysed at a median of 3.4 years (IQR 3.2-3.8). Longest follow-up was 4.7 years. Baseline risk was high (mean logistic EuroSCORE 31±15, Society Thoracic Surgery score 9.0±3.5), mean age 83.4 ± 7.5years. Survival at a median of 3.4 years was 64%. The most common mortality cause was respiratory (30%). There was no mortality related to valvular dysfunction or failure. There were no cases of valve failure or repeat operation/intervention. Functional class improvements, Aortic Valve Area (AVA) and mean transaortic gradients were maintained long-term (see table). In the 10 patients who survived >4 years to date, the mean increase in transaortic mean pressure from 12 to 48months was 3.0 ± 2.1mmHG ($p<0.05$), and mean AVA decrease of 0.23 ± 0.16cm2 ($p<0.05$). In 11 patients who underwent CT follow-up, no evidence of structural deterioration, fracture or recoil were detected.

	Baseline	1 year	2 years	3 years
NYHA Class †	3.0±0.56	1.3±0.56	1.3±0.48	1.4±0.56
AVA, (cm2) †	0.59±0.16	1.50±0.34	1.46±0.36	1.42±0.27
AVMG, mmHG †	45.2±4.7	11.4±5.6	12.8±4.9	12.6 ±5.0
NYHA=New York Heart Association functional class, AVA = Aortic Valve Area, AVMG=Aortic Valve Mean Gradient, † mean ± SD				

Conclusions: TAVI with the EBEV shows durability to over 4 years with no evidence of structural failure.